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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,570	07/24/2003	John J. Simpson	66638/36621	3401

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EXAMINER	
JONES, HUGH M	
ART UNIT	**PAPER NUMBER**
2128	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/627,570	SIMPSON ET AL.	
	Examiner	Art Unit	
	Hugh Jones	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-26,28 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-26,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-2, 4, 6-26, 28-29 of U. S. Application 10/627,570, filed 7/24/2003, are pending.

Specification

2. The amendment filed 11/8/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The deletion of the phrase "should be" appears to change the scope of the specification. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter since the claims are drawn to an abstract algorithm or disembodied program steps and are not concrete, useful and tangible.

- The claim merely recites the step of providing a computer program product encoded with software instructions. The claim does not recite a computer program product or it's use.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-2, 4, 6-26, 28-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Paragraphs 31-36 of the *original* specification recite:

> "A summary of software development requirements that characterize a preferred implementation of the API plug-in module are as follows:
>
> [0032] The software development process *should provide* functionality through a user interface that is conveniently presented with a 3D visual simulation application;
>
> [0033] The software development process *should provide* creation of one or more unique HLA objects with a state (e.g., "on" or "off", etc.) that is controlled by the user interface within the 3D visual simulation. The state of these objects should be published to the functional simulation application, and should be identifiable by the same unique name in each simulation;

[0034] The software development process *should provide* the functionality of setting the states of all published objects upon events that are triggered within the 3D visual simulation;

[0035] The software development process *should provide* creation of one or more unique HLA objects with states that are controlled by the functional simulation. The state of these objects are subscribed to and from the functional simulation application, and must be identifiable by the same unique name in each simulation; and

[0036] The software development process *should provide* for the virtual environment simulation application to catch the state changes of subscribed HLA objects, and thus trigger or influence changes of behavior within the graphically-depicted 3D virtual environment"

7. This demonstrates that the invention had not been conceived to the extent indicated by said paragraphs.

8. Claims 1-2, 4, 6-26, 28-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification discloses generalities and appear to list the possible (*should be*) capabilities of the software, but provide no substantive details relating to the claimed invention.

Claim Interpretation

9. The recitations following words such as *configured to* are provided no patentable weight. It is the configured software, that when executed by a computer causes a computer to carry out certain steps.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 4, 6-26, 28-29 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shockley et al.

12. Shockly et al. disclose:

simulating the behavior of a user-interactive environment, the method comprising:

running a virtual environment (VE) simulation application that (1)graphically depicts a VE, (2) receives input from a user that corresponds to a user interaction with the VE, and (3) provides graphical output to the user that corresponds to a condition of the VE (entire paper; note fig. 1, 2, 5 and corresponding text);

running a functional simulation application that determines the condition for the VE at least in part based upon the user input (fig. 1-2, 3, 5 and corresponding text; section 2);

communicating the user input received by the VE simulation application to the functional simulation application via a high level architecture (HLA) protocol (entire paper; note fig. 1, 2, 5 and corresponding text; section 2); and

communicating the condition determined by the functional simulation application to the VE simulation application via the HLA protocol (entire paper; note fig. 1, 2, 5 and corresponding text; section 2).

the user input communicating comprises publishing via an API module at least one HLA object to the functional simulation application, with the published HLA object being at least in part defined by the received user input (section 1-2; note fig. 1, 2, 5 and corresponding text);

publishing, by the functional simulation application, an HLA object that corresponds to the determined VE condition (section 1-2; note fig. 1, 2, 5 and corresponding text); and

subscribing, by the API module, to the HLA object published by the functional simulation application (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the VE is a three-dimensional VE, and further comprising managing the two communicating steps with a runtime infrastructure (RTI) interface (sections 2-3, 4; note fig. 1, 2, 5 and corresponding text);

wherein the user input communicating step comprises publishing via an API module at least one HLA object to the functional simulation application, wherein the published HLA object is at least in part defined by the received user input (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the user input communicating step comprises subscribing to the HLA object published by the API module, and wherein the functional simulation application running step comprises processing the subscribed HLA object through conditional logic to determine the condition for the VE (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the condition communicating step comprises: publishing, by the functional simulation application, an HLA object that corresponds to the determined VE condition; and subscribing, by the API module, to the HLA object published by the functional simulation application (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the VE simulation application running step comprises determining the graphical output for the VE based on the subscribed HLA object published by the functional simulation application (fig. 1, 5);

wherein the VE is a three-dimensional VE, and wherein the functional simulation application and the VE simulation application are remote from each other and interconnected via a computer network (fig. 1);

wherein the virtual environment simulation application generates a training environment for a user (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the RTI interface comprises an application program interface (API) module that receives user input from the virtual environment simulation application and publishes the user input to the functional simulation application (section 1-2; note fig. 1, 2, 5 and corresponding text);

wherein the VE is a three-dimensional VE, and further comprising running a plurality of the functional simulation applications (fig. 1, sections (2.1-2.2).

13. Claims 11-26, 28-29 are rejected similarly.

Response to Arguments

14. Applicant's arguments, filed 11/8/2006, have been carefully considered, but are not persuasive.

15. The 101 rejections are withdrawn in view of the amendments for all claims except claim 11.

> 11. (Currently Amended) A method comprising:
>
> providing a computer program product that includes software instructions for interfacing a virtual environment simulation application with a functional simulation application, the software instructions including:
>
> interfacing a virtual environment simulation application with a functional simulation application via a runtime infrastructure (RTI) interface that communicates data between the two simulation applications according to a high level architecture (HLA) protocol, and the virtual environment simulation application generates a training environment for a user.

16. This does not provide a concrete, useful and tangible result.

17. The arguments against the 112 rejections are not persuasive. Amendment to the specification does not traverse the 112(1) rejections.

18. The arguments regarding the prior art rejections are not persuasive. The argument regarding interfaces is not understood. See, for example, fig. 1:

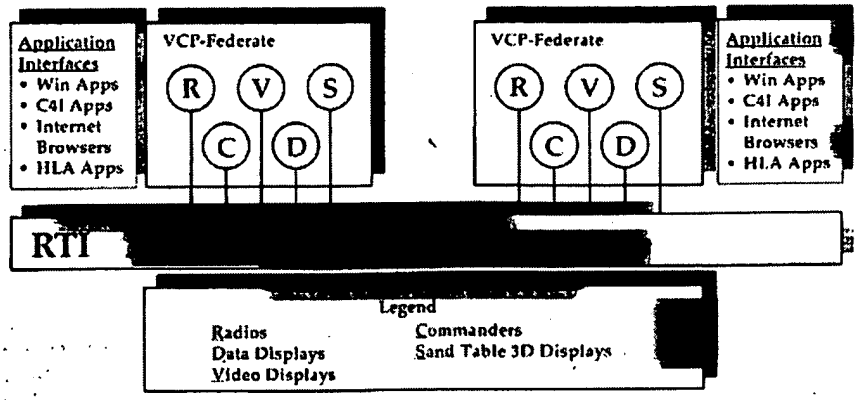

Figure 1. Original HLA VCP architecture

See also:

4. Using Commercial and DoD Standards and the Applicability of H-Anim

From the initial development of the VCP, the intent has been to create technologies that can be used in both military and commercial applications. The military applications of the VCP are not only a virtual collaborative environment for field commanders, but also in simulation exercises involving command, control, communications, computers, and intelligence (C4I) assets as a command post simulation. With HLA, we envision additional simulation applications of the individual components as federates—e.g., avatar representations of individuals in a simulation. For commercial applications, we envision a variety of uses of the VCP technology in the creation of virtual collaborative environments for VTC applications, distance learning, and electronic commerce.

The limitations directed at publishing, subscription, etc. are inherent in HLA (see, for example, Palmer):

> The HLA supports harnessing multiple existing simulation programs to create a larger simulation by specifying distribution and communication mechanisms, as well as providing a means by which instances and changes in state can be communicated to other members of a simulation. New simulations produced using HLA share a common architecture, and existing simulations can be wrapped to participate in larger scenarios. *A collection of communicating simulations is called a Federation; each individual member is a Federate. Each Federate is responsible for maintaining and publishing the object model (the Simulation Object Model, SOM) it needs to conduct its operations*. SOM Classes have attributes that can be updated during state exchanges. Class Attributes can be "owned" by different Federates; the granularity of data exchange is relatively fine and data-oriented.

Also see page 8 of the specification:

> The HLA protocol is a well-known general purpose architecture for simulation reuse and interoperability developed under the leadership of the Department of Defense (DoD). RTI software, whose development was also sponsored by the DoD, is used to support operations of system (federation) execution. The RTI interface provides a set of services used by applications/federates within the system/federation to coordinate their operations and data exchanges during a runtime execution. Access to the set of RTI services is defined according to the HLA protocol. Under HLA guidelines, the state of an object is published and subscribed between applications/ federates using RTI. As used herein, the term "object"

These teachings have also been provided by Applicants in the IDS.

Conclusion

19. The prior art of record and not relied upon is considered pertinent to applicant's disclosure. The art is not applied because it is cumulative to the applied art.

- Torguet et al.; An HLA distributed virtual reality application on a Linux cluster; pp. 1-2; ccgrid2003 (conference proceedings); 5/2003.
- Page; The rise of web-based simulation: implications for the high level architecture; pp. 1663-1668; Proc. Winter Sim. Conf.; 1998.
- Liles et al.; Dynamic discovery of simulation entities using bamboo and hla; pp. 1-5; SIW1998 (conference proceedings); 1998.
- Lu et al.; Supporting large scale distributed simulation using hla; pp. 268-294 ; ACM trans. Modeling and Computer Sim (TOMACS) ; 2000.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

21. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be:

directed to: Dr. Hugh Jones telephone number (571) 272-3781,

Monday-Thursday 0830 to 0700 ET,

or

the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist, telephone number (703) 305-3900.

mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051 (for formal communications intended for entry)

or (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

Dr. Hugh Jones

Primary Patent Examiner

February 1, 2007